# THE U.S. "SPACE UNLIMITED" EXHIBIT AT THE BERLIN FAIR, 1956

Report No. A-3
Series No. 3
October 24, 1956

RESEARCH STAFF
OFFICE OF PUBLIC AFFAIRS
AMERICAN EMBASSY

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The United States exhibit at the 1956 Berlin Fair entitled "Space Unlimited" made extensive use of the many technical inventions and discoveries which have occurrred in the field of space research in the past few years. The entire exhibit entailed considerable trouble and expense in order to translate the complex subject matter with its concomitant complicated electronic devices into a presentation simple enough to achieve understandability and yet effective enough to add to the United States's prestige in the eyes of the viewer.

The exhibit was first unveiled at the Berlin Fair. Even before the opening, extensive plans were made to send this particular exhibit not only on tour throughout Germany, but to construct additional copies for use elsewhere in the world. Both projects would involve considerable expense. A thorough study of the space research exhibit was, therefore, deemed desirable in order to answer two main questions. Was the exhibit on space research interesting to its viewers? And was the exhibit,as a whole, as well as its component parts, understood by these same viewers independent of their possible enthusiasm for the subject matter. Little would be gained if it were found that most visitors went away from the "Space Unlimited" exhibit to tell their friends, "Wonderful show, but you know I couldn't understand a bit of it."

This report utilizes the responses of several samples of visitors to the Berlin Fair. One sample of 400 cases gives the reactions of visitors to the U.S. exhibit at the Marshall House. One sample of 600 cases gives the opinions of visitors to the Fair as they entered the Fair Grounds. A similar sample of 600 cases of visitors as they left the Fair were asked the same questions as the preceding group. A fourth sample of 400 cases of people leaving the Fair were asked questions designed for comparison with the Marshall House sample. All samples of visitors 18 years of age and over were randomly selected. The procedure followed in drawing the samples was to interview approximately the same number of persons each day from the beginning to the very end, i.e. from September 16 through September 30. To insure randomness and to avoid any uncontrolled or biased choice by the interviewers, the third adult appearing on the half hour and the hour was interviewed.

Interviewing for the surveys was conducted by DIVO-Gesellschaft fuer Markt- und Meinungsforschung m.b.H., Frankfurt/Main, a German survey organization working under contract with the Research Staff.

# SUMMARY

## Attendance

As visitors to the Berlin Fair entered the gates more than six out of ten intended to have a look at the U.S. exhibit at the Marshall-House. However, due primarily to the crowds waiting outside of the building most of these would-be visitors were discouraged, and only about three out of ten actually saw the U.S. exhibit, "Space Unlimited."

## General Appraisal of the Exhibit

The majority of those who saw the U.S. exhibit found it better than they had expected, and hardly anyone was disappointed. The U.S. exhibit was rated much higher than the Fair as a whole (eight out of ten Marshall-House visitors liked it "very well", as against only half of the Fair visitors saying that about the entire Fair).

While slightly more Fair visitors said that they liked the British rather than the U.S. pavilion best, it was found that one out of two visitors to the U.S. exhibit thought it the best as against only one out of three visitors to the British pavilion calling it the best.

## Reaction to Details of the Exhibit

The Lecture Room and Film presentation were considered the most interesting and easily understood sections of the U.S. exhibit, while the Historical and Stratospherebaloon sections were found to be the least interesting.

Despite the fact that the Electronics Laboratory was called the most difficult to understand, there is evidence that this may be due to people's inability to get close enough to properly see and hear what was presented. In addition, the Electronis Lab (following closely behind the popular Lecture Room) was found to be one of the sections with the most new things, as well as one which many would like to revisit; thus indicating that the basic interest is there.

While eight out of ten had a clear comprehension of the message of the Lecture Room, and six out of ten clearly "got" the idea behind the section on Medical Research, only three out of ten had a clear understanding of the purpose of the Electronics Laboratory section.

## Impact of the Exhibit

Only one visitor in twenty came away from the U.S. exhibit without any ideas of what the exhibit actually intended to convey - with three quarters clearly comprehending the exhibit's message.

Aside from the expected gains in knowledge about space research (which occurred), it was interesting to note that visitors to the U.S. exhibit:

1) came away with the view that the exhibit did not brag about U.S. contributions in the field.
2) tended more to believe that speace research is a positive (and peaceful) step than was found among those entering the Fair Ground
3) tended more to believe that the U.S. is very willing to share its scientific knowledge, than was found among those entering the Fair Grounds.

## Section I. - Attendance

### OVER SIX OUT OF TEN INTENDED TO VISIT U.S. EXHIBIT, BUT LESS THAN THREE OUT OF TEN ACTUALLY DID SO....

As visitors to the 1956 Berlin Trade Fair entered the grounds they were asked whether they had already decided to visit any of the country pavilions, a list of which was furnished to them. Almost three-quarters (73%) said they had decided to visit one or more of the country exhibits. Almost two-thirds of those interviewed (63%), and by far the largest percentage, indicated that they intended to visit the Marshall House where the U.S. exhibit was housed. The next largest percentage was the 37% who said they would visit the English pavilion.

The check of Fair visitors as they left the grounds to determine which country exhibits they had actually seen, revealed that while 63% may have wanted to see the U.S. exhibit only 29% actually did so. This percentage (of total Fair visitors seeing the Marshall House exhibit) was considerably under the 58% which saw the exhibit on "Clothes Make the Man" in 1955, or even the 50% which saw the 1953 exhibit.

From the following composite table, the reader will be able to compare the percentages which intended to visit the various country pavilions, with the percentages which actually did so in 1956, as well as the relative attendance to these same country exhibits in 1955, and 1953.

| | 1956 | | 1955 | 1953 |
|---|---|---|---|---|
| | Intention1) | Actual2) | Actual2) | Actual2) |
| America (Marshall House) | 63% | 29% | 58% | 50% |
| France | 30 | 53 | 49 | 59 |
| England | 37 | 59 | 52 | 31 |
| Canada | 27 | 38 | 36 | 41 |
| Italy | 32 | 55 | 50 | 58 |
| Belgium | 22 | 39 | 36 | 44 |
| Netherlands | 26 | 49 | 50 | 53 |
| Austria | 30 | 46 | 48 | 53 |
| Pavilion of the Nations | 30 | 34 | 30 | 30 |
| Spain | 19 | 11 | - | - |
| Switzerland | 20 | 18 | - | - |
| None | 2 | 24 | 25 | 21 |
| | 338%@ | 455%@ | 434%@ | 440%@ |

1) Based on the question, "At this year's Industrial Fair a number of foreign nations again have their own pavilions or special exhibitions. Have you decided yet which of the pavilions and exhibitions listed on this card you are going to visit?" IF 'Have decided': 'Which have you already decided to visit?'" - asked of the "Fair Entrance" sample of 600 cases.

2) Based ib tge question, "At this year's Industrial Fair a number of foreign nations again have their own pavilions or special exhibitions. Which of the pavilions and special exhibitions listed on this card did you visit?" - asked of the two "Fair Exit" samples totaling 1001 cases in 1956, the "Exit" sample of 500 cases in 1955, and 623 cases in 1953.

CROWDS WAITING OUTSIDE THE MARSHALL HOUSE DISCOURAGED MOST OF THOSE WHO DID NOT SEE THE U.S. EXHIBIT....

That 71% of the visitors to the 1956 Berlin Trade Fair who did not actually visit the U.S. Exhibit at the Marshall House were asked why they did not visit it. The outstanding reason was that it simply was "too crowded"- given by 42% of the people at the Fair. Inasmuch as the Marshall House exhibit was set up to admit groups of about 250 people at one time into the initial film showing, which lasted approximately ten minutes, it is easy to understand how a long waiting line outside the building would quickly build up, and that this very line might well discourage people who had every intention of visiting the U.S. exhibit. These discouraged people might then, as long as they already were in the area of the country pavilions, go and visit another country exhibit - one that they had not initially intended to go see.

> "At this year's Industrial Fair a number of foreign nations again have their own pavilions or special exhibitions. Which of the pavilions and special exhibitions listed on this card did you visit?" (CARD)
>
> IF "Marshall House not visited":
> "Would you please tell me for what reasons you did not visit the American exhibition in the Marshall House? Didn't you get around to it, weren't you aware of it, or was this exhibition of too little interest for you?"

| | Visitors to West Berlin Industrial Fair 1955 | Visitors to West Berlin Industrial Fair 1956<br>Fair exit (1001) |
|---|---|---|
| Didn't get around to it | 24% | 21% |
| Wasn't aware of it | 4 | 2 |
| Too little interest | 6 | 5 |
| Too crowded | 7 | 42 |
| No opinion | 1 | 1 |
| | 42% | 71% |

With the single exception of the crowded condition prevalent at the Marshall House, the answers this year by people who did not see the U.S. exhibit are strikingly similar to the results found last year, when there was an entirely different type of show.

Three Stage Rocket - at Entrance to U.S. Exhibit

Crowds Waiting Outside Exhibit

Additional supporting material showing that people were discouraged from visiting the Marshall House because it was too crowded, is to be found in the following cross-tabulation. The 71% of the Fair Grounds visitors who did not see the U.S. exhibit were first separated according to the reason they gave for not visiting the Marshall House (i.e. didn't get around to it, not aware of it, too crowded, etc.), then the answers of the people in these groups were classified according to whether they knew what the U.S. exhibit was about or not.

Those people who said that they had not seen the Marshall House exhibit because it was too crowded were found to be much more aware of what the exhibit was about than any of the other groups. In fact they seemed to be just about twice as likely to be aware of what was in fact being shown than was found to be the case for any of the other groups (63% as against 37% among those who said they just had not gotten around to it, and 29% from among those who claimed to be either unaware of it or frankly admitted they were not interested.

| | REASONS FOR NOT VISITING THE MARSHALL HOUSE | | |
|---|---|---|---|
| Knowledge of U.S. Exhibit | Too crowded | Didn't get around to it | Not aware, or not interested |
| Had knowledge | 63% | 37% | 29% |
| Had some knowledge* | 6 | 8 | 5 |
| Had no knowledge | 31 | 55 | 66 |
| | 100% | 100% | 100% |

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* Have some general knowledge, but also include wrong ideas in their statements.

OVER TWO OUT OF TEN ON ENTERING FAIR GROUNDS KNEW WHAT WAS AT U.S. EXHIBIT, BUT SEVEN OUT OF TEN KNEW WHEN LEAVING THE FAIR....

As people entered the Fair Grounds, they were asked whether they had already decided to visit any of the country pavilions. Those individuals who said that they intended to visit the Marshall House (63%) were then asked what they expected to see there. Based on the answers which this group gave it could be determined that only one third (21%) really knew, while an additional 5% had some knowledge.

> "At this year's Industrial Fair a number of foreign nations again have their own pavilions or special exhibitions. Have you decided yet which of the pavilions and exhibitions listed on this card you are going to visit?" (CARD)
>
> IF "Have decided":
> "Which have you already decided to visit?"
>
> IF "America" named:
> "What do you expect to see at this American exhibition in the Marshall House?"

SUMMARY TABLE

| | Fair Entrance |
|---|---|
| Have knowledge | 21% |
| Have some knowledge* | 5 |
| Have no knowledge | 37 |
| | 63% |

Despite the fact that fewer than three out of ten visitors to the Fair actually saw the U.S. exhibit (29%), it is worthwhile noting that even among those Fair visitors who did not see the "Space Unlimited" exhibit at the Marshall House more than half came away from the Fair knowing what was on display there.

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* Have some general knowledge, but also include wrong ideas in their statements.

Rocket - Outside of Exhibit

The following Summary Table classifies the individuals who did not visit the Marshall House based on their replies to the question as to what was shown there.

> "At this year's Industrial Fair a number of foreign nations again have their own pavilions or special exhibitions. Which of the pavilions and special exhibitions listed on this card did you visit?" (CARD)
>
> IF "Marshall House not visited":
> "Can you tell me what the exhibition in the Marshall House is called, or do you know what is shown there?"

SUMMARY TABLE

| | Fair Exit<br>(1001) |
|---|---|
| Have knowledge | 35% |
| Have some knowledge* | 5 |
| Have no knowledge | 31 |
| | 71% |

Therefore, when to the 29% of all Fair visitors who visited the Marshall House are added the above 40% who had at least some knowledge of what was being shown there, a total of 69% results. Hence the deduction that although only some two-tenths knew what was at the Marshall House when they entered the Fair Grounds, seven-tenths had some knowledge on the way out.

Verbatim comments which were used to effect the above classification follow.

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* Have some general knowledge, but also include wrong ideas in their statements.

"At this year's Industrial Fair a number of foreign nations again have their own pavilions or special exhibitions. Have you decided yet which of the pavilions and exhibitions listed on this card you are going to visit?" (CARD)

IF "Have decided":
"Which have you already decided to visit?"

IF "America" named:
"What do you expect to see at this American exhibition in the Marshall House?"

| COMMENTS INDICATING KNOWLEDGE | Fair exit |
|---|---|
| Something about space research and space flight: | 27% |

"I think this exhibit will show me where space research stands at present."
"I hope to learn something about space research and other problems connected with this science. Furthermore, I expect to see the model of an earth satellite."
"There is said to be a section about space flight, with a model of an earth satellite being shown."
"Something about space research conducted with a rocket that is propelled to the moon."
"As a physicist, I am interested in the earth satellite and all problems connected with this project."
"I'm very anxious to learn something about this satellite business."

| COMMENTS INDICATING NO KNOWLEDGE | |
|---|---|
| Something about nuclear physics: | 10 |

"I think one can learn something about atomic research."
"Above all, the latest developments in the field of atomic science."
"I couldn't say it exactly, but I guess that the Marshall House exhibitions will offer a lot about atomic research."
"A demonstration of how atomic energy can be used for peaceful purposes."
"I'm not sure, but I think it's kind of an atomic energy exhibit."

| | |
|---|---|
| Technical Innovations: | 9 |

"I naturally want to see the latest developments in the technical field."
"I'm highly interested in technical innovations, and I hope that the exhibition in the Marshall House presents everything that has been developed recently in the States."
"I expect to see modern inventions, and above all, typical American devices, such as machines and things like that."
"I'm interested in measuring instruments, and I hope to see a lot of those things at this exhibit."
"A show of electrical appliances."

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Fair exit

Homes, furniture, household appliances: 3%

"Last year complete homes were displayed, and I hope to see some more of them this year."
"New furniture models, and time-saving kitchen appliances."
"Radio sets, for instance, and gadgets for the household."

Something about the American economy: 1

"I expect to learn something about the American economy in general, how things are going over there, and statistics about the American economic life such as they showed us last year."
"We want to compare Western economic policies with those applied in the East Zone.

Conveyances and engines: 1

"The latest models of conveyances and engines."
"Motorcycles and motors in general."

Textiles and ready-made wear: 2

"Ready-made clothing, new materials and textiles. As a dressmaker I'm especially interested in American dressing styles and the latest American fashions."
"Above all, I expect to see fashions, new materials, and the fabrication of plastic fibres."

Other answers: 2

"I don't know exactly, but I hope to get some information on colored films."

No opinion, no answer: 18

73%@

@ Some respondents gave more than one answer.

"At this year's Industrial Fair a number of foreign nations again have their own pavilions or special exhibitions. Which of the pavilions and special exhibitions listed on this card did you visit?" (CARD)

IF "Marshall House not visited":
"Can you tell me what the exhibition in the Marshall House is called, or do you know what is shown there?"

COMMENTS INDICATING KNOWLEDGE

Fair exit
(1001)

Space and rocket research (general answers): 36%

"Space research and rocket development for the exploration of the universe."
"It is about flights into the stratosphere."
"American space research."
"Space flight and rocket research."
"This exhibit shows the possibilities of space flight and its significance for mankind."

Rocket models: 16

"Rocket models have been erected at the entrance of the exhibition."
"It is a rocket show."
"Space rockets."
"Rockets to be shot into space."

Space unlimited: 12

"Space unlimited."

The model of the earth satellite: 10

"The earth satellite that is to be shot into space is displayed at this exhibition."
"They show a satellite that can be shot into the atmosphere by means of a rocket."
"They show the earth satellite there."
"They show an artificial moon."

Electronic devices: 3

"The electronic steering of the earth satellite."
"They have the apparati and measuring instruments for rocket equipment."
"Electronic devices are shown there."

COMMENTS INDICATING NO KNOWLEDGE

Atomic science and research: 7

"I'm not sure, but I think it's an exhibition about atomic energy. I'll have another look at it."
"Atomic science."
"It's something about atomic research, I presume."
"Something about atoms."

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| | Fair exit |
|---|---|
| Atomic weapons: | 1% |
| "Atomic weapons are displayed there."<br>"Somebody told me that A-bombs and such things are shown there." | |
| Other wrong answers: | 4 |
| "They demonstrate the test which jet pilots have to undergo."<br>"Test pilots."<br>"They show all kind of food stuff there, I guess." | |
| No opinion, no answer: | 26 |
| | 115%@ |

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@ Some respondents gave more than one answer.

## DESPITE LOSS OF NUMBERS, PERSONAL CHARACTERISTICS OF ATTENDEES SIMILAR TO THOSE OF PEOPLE INTENDING TO VISIT U.S. EXHIBIT....

From the following comparisons of the personal characteristics of those people who actually saw the Marshall House exhibit with the characteristics of those people who said that they intended to go to the Marshall House, it can be clearly seen that the two groups are fairly similar. It is fairly safe to conclude, therefore, that while the calculated method of allowing groups of 250 to enter at one time in order to see the introductory explanatory film lost some numbers of prospective visitors it did not significantly alter the composition of those who finally saw the exhibit from those who had wanted to see it, except in regard to education.

### PERSONAL CHARACTERISTICS

| | Intended to visit (380) | Actually visited (400) |
|---|---|---|
| Sex: | | |
| Men | 66% | 72% |
| Women | 34 | 28 |
| | 100% | 100% |
| Age: | | |
| Up to 24 years | 17 | 16 |
| 25 to 34 years | 24 | 28 |
| 35 to 44 years | 15 | 14 |
| 45 to 54 years | 24 | 21 |
| 55 years and over | 20 | 21 |
| | 100% | 100% |
| Education: | | |
| Elementary school | 58 | 47 |
| Beyond elementary | 42 | 53 |
| | 100% | 100% |
| Occupation: | | |
| Professionals | 14 | 21 |
| Businessmen | 12 | 6 |
| White-collar workers | 25 | 21 |
| Skilled laborers | 20 | 19 |
| Semi-skilled laborers | 3 | 5 |
| Domestic service | 3 | 2 |
| Farmers, farmhands | 1 | - |
| Housewives | 11 | 11 |
| Pensioners, retired | 6 | 6 |
| Students, apprentices | 5 | 9 |
| | 100% | 100% |
| Home: | | |
| West Berlin | 56 | 57 |
| East Berlin | 24 | 18 |
| West Germany | 4 | 3 |
| East Germany | 16 | 22 |
| | 100% | 100% |

RELATIVELY FEW PEOPLE SAW SPACE EXHIBIT MORE THAN ONCE....

Less than one person out of twenty who saw the space exhibit at the Marshall House came back for a second, third, or fourth visit. This figure (4%) looks particularly small when compared with the percentage (13%) which returned for additional visits at the Fair Grounds, or even with the percentage which returned to the "Atoms for Peace" exhibit at the Marshall House in 1954 (also 13%). The same factor which prevented many from seeing the exhibit in the first place (namely, the waiting crowds outside the building) undoubtedly operated to discourage repeat visits by those who had already seen the U.S. exhibit this year.

There was no necessity to wait at the 1954 Atom Exhibit, and, naturally, no necessity to wait in order to enter the exhibition grounds.

"Have you visited the Fair exhibition here in the Marshall House today for the first time, or have you been here before? (How often?)"

| | 1956 | | 1954 |
|---|---|---|---|
| | Space exhibit | Fair exit | Atomic exhibit |
| | | (400) | (998) |
| For the first time | 96% | 87% | 86% |
| Have been here before, once | 2 | 4 | 8 |
| Have been here before, twice | 1 | 3 | 5 |
| Have been here before, three or more times | 1 | 6 | 1 |
| | 100% | 100% | 100% |

## MAJORITY FIND SPACE EXHIBIT BETTER THAN THEY EXPECTED ...

A majority (51%) of those who saw the U.S. exhibit "Space, Unlimited" said that it was better than they had expected, while an additional 30% indicated their satisfaction with the show by replying that it was "as expected."

Among the remaining fifth of the visitors to the Marshall House (19%) who did not say that the exhibit was at least as good as they expected, only a small segment, 4% said that they were disappointed in what they saw.

"Did this exhibition come up to your expectations, did it exceed them, or did it disappoint you in one way or other?"

| | Marshall House |
|---|---|
| Better than expected | 51% |
| As expected | 30 |
| Disappointed | 4 |
| No opinion | 15 |
| | 100% |

THE FEW DISAPPOINTED PEOPLE WANTED MORE DETAILS...

That small segment among the visitors to the U.S. space exhibit who said that they were disappointed in the exhibit were asked to name the reason for their disappointment. Three out of four said that they had expected more details, more technical information from the exhibit. Hardly anyone was disappointed because it was too technical.

> "Did this exhibition come up to your expectations, did it exceed them, or did it disappoint you in one way or other?"
>
> IF "Disappointed":
> "In what respect have you been disappointed?"

Marshall House

Wanted more detailed information — 3%

"I thought the technical information was too general. I expected a more detailed explanation of the functions of all technical installations."
"We expected to get a closer technical insight. The information given was only for laymen. Persons with great technical interest should have been able to get more information than was actually offered."
"I expected more information on technical matters, as for instance on rockets, rocket fuel, etc."
"I thought they'd give more detailed information on the earth satellite."

Poor presentation — 1

"I was disappointed at the whole set-up. The exhibition hall presented a rather sober sight and the exhibits were not clear enough. For the layman it was too abstract."
"The explanations given were rather poor, especially those for the electronic brain."

Wanted more general exhibit — *

"I though that this sector would give general information and not only concentrate on satellites."
"I thought the exhibition would be more comprehensive but it's only about space research."

4%

* Less than one half of one per cent.

OVERALL IMPRESSION OF U.S. EXHIBIT FAR EXCEEDS THAT OF THE FAIR ...

Eight out of ten visitors to the U.S. exhibit (79%) were so moved by the exhibition as to reply that they liked it "very well" - the highest rating that they could assign the show. On the other hand, just under half of the Fair ground visitors (47%) would go that far in giving their overall impression of the entire Fair.

The overall rating of the Fair was almost exactly the same this year as in 1955. In both years just under half liked the Fair "very well" (47% vs 48% in 1955), while over a third liked it "well" (38% vs 36% last year). Should the two top categories be added, on the basis that they represent people who "liked" the Fair, the totals would be 85% for 1956 and 84% for 1955. Against these percentages, there would be 98% from among the visitors to the U.S. exhibit who liked it that well.

> "What is your overall impression of the (American exhibition) (Industrial Fair) here? Did you like it very well, well, fairly well, not so well, or not at all?"

| | 1956 | | 1955 |
|---|---|---|---|
| | Space Exhibit (400) | Fair Exit (400) | Fair Exit (500) |
| Very well | 79% | 47% | 48% |
| Well | 19 | 38 | 36 |
| Fairly well | 2 | 11 | 9 |
| Not so well | * | 2 | 6 |
| Not at all | - | - | 1 |
| No opinion | - | 2 | * |
| | 100% | 100% | 100% |

## EXHIBIT DETAILS MENTIONED MOST OFTEN AS PARTICULARLY LIKED - LECTURE ON THE SATELLITE LEADING ITEM ...

When visitors to the "Space Unlimited" exhibit at the Marshall House were asked what they particularly liked, most responses were concerned with details of the exhibit (83%), while only about half as many (46%) gave general comments dealing with the arrangements and the amount and level of information presented.

Among the comments concerning various sections of the exhibit, the leading items were: the lecture on the earth satellite (28%), the films (22%), and the exhibition of electronic devices (13%).

"What did you particularly like about the exhibition?"

Summary Table

| | Marshall House | |
|---|---|---|
| Selection of details | (83%) | |
| Lecture on the earth satellite | | 28% |
| The films | | 22 |
| Exhibition of electronic devices | | 13 |
| Rocket models | | 8 |
| Medical Research | | 7 |
| Aerial photographs | | 5 |
| General comments | (46%) | |
| Clear arrangement | | 25 |
| Information on space research | | 19 |
| Other answers | | 2 |
| Everything liked | ( 5%) | |
| No opinion/No answer | ( 1%) | |
| | 135%@ | |

---

* Less than one half of one per cent.

@ Some respondents gave more than one answer.

COMMENTS IN DETAIL ...

"What did you particularly like about the exhibtion?"

Marshall House

SELECTION OF DETAILS (83%)

Lecture on the earth satellite: 28%

"Friedrich Luft's speech on problems and difficulties of rocket flight."
"The information on the artificial moon, the satellite of earth, was the most interesting offering."
"Through the model of and the lecture on the earth satellite I learned for the first time what is going on in the field of space research."
"The best thing was the introductory lecture by Friedrich Luft on the underlying idea of space research."
"I particularly liked the lecture on the artificial earth satellite."

The films: 22

"I particularly liked the film showings that made things clear which had been unimaginable up till now."
"To show explanatory films was a good ideà. They make things clearer than pictures and graphics can do."
"I particularly liked the film on the altitude tests by means of rockets."
"For those who haven't occupied themselves with space flight, the film showings were a perfect means to get a rather clear idea of this problem."
"The experiments in which animals are involved without suffering any harm were particularly interesting."

The exhibition of the electronic devices: 13

"I particularly liked the part where electronic devices were exhibited since my interests lie in this sector."
"These tiny instruments that measure and register all sort of information are highly interesting, furthermore I was struck by the demonstration of the electronic brain."
"I didn't know that transmitter valves of that small size could be made, and that cameras are installed in rockets that photograph the surface of the earth at such altitudes."
"I liked the demonstration of the Braun valve best because I once was a television engineer."

The rocket models: 8

"The rocket, I must say, was the most impressive item of the exhibition. It is surprising that it functions without a crew onboard."
"I think the rockets that can reach such great altitudes are the most remarkable things of the exhibit."
"These rockets are unique, I've never seen such things before."

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Marshall House

The illustration of medical research: 7%

"I have learned that medical research is doing everything in its power to protect man from physiological damages in the upper atmosphere."

"I was particularly interested in the tests with humans which revealed the reactions of the different organs at high speed and great altitude."

"The most interesting thing I learned there was the fact that a cardiagram can be taken of the crew flying in a spaceship."

The aerial photographs of the earth: 5

"What I liked best were the photographs of the surface of the earth taken at an altitude of 430 km."

"The view of the earth, Such photographs have never been taken before."

"The photos showing the surface of earth."

GENERAL COMMENTS (46%)

The clear arrangement: 25

"I liked the clear arrangement of the exhibit, including its matter-of-fact character and the film showings and lectures in alternate order."

"Everything they offer at the exhibit is very impressive and easy to understand because all the different fields are explained by means of films, lectures and objects."

"The exhibit made sense even to the common man."

"I liked it that they offered not only films but also scientific records, graphics and photomontages."

"I myself have learned more about astrophysics through this exhibit than in twelve months in school. The illustration of the cosmos is magnificent.

The information on the development and significance of space research: 19

"I'm living in the East Zone, and we people there get almost no information on space research. Here at the exhibition I've learned for the first time some details of this science and its benefit for mankind."

"I didn't know anything about space research up till now. Now I know what it is all about."

"It is so exciting to learn that American space scientists will soon be able to tell us what is going on in the upper atmosphere."

"It is overwhelming to see the working methods of space science and what progress has been made in space flight."

"I liked the clear demonstration of the progress made in the field of space research."

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(Cont'd from preceding page)

| | Marshall House |
|---|---|
| Other answers: | 2% |
| "It deeply impressed me that the Americans allow the public such a comprehensive insight into this field." | |
| "I was favorably impressed that this exhibit wasn't used for propaganda purposes." | |
| EVERYTHING LIKED | ( 5%) |
| I liked everything: | 5% |
| "The whole exhibition was first rate." | |
| "Everything was so excellent that I don't know what to praise." | |
| "That is difficult to say. Everything was new and interesting for me." | |
| NO OPINION/NO ANSWER | ( 1%) |
| | 135%@ |

* Less than one half of one per cent.

@ Some respondents gave more than one answer.

## MAJORITY HAD NOTHING TO CRITICIZE ABOUT THE EXHIBIT. "TOO MANY PEOPLE" LEADING COMPLAINT ...

When asked what they did not particularly like about the exhibit, a majority of the visitors to the Marshall House either answered that they liked everything (47%) or had nothing to say (8%).

It is particularly significant, therefore, that one person out of four (25%), over half of that group with any criticism (45%), complained that there were too many people in the building at one time thus preventing everyone from seeing and understanding the things which were shown there.

"And what did you not particularly like about this exhibition?"

Summary Table

| | Marshall House | |
|---|---|---|
| No criticism | (55%) | |
| I liked everything | | 47% |
| No opinion, no answer | | 8 |
| Criticism | (51%)@ | |
| Too many people | | 25 |
| Lack of information | | 8 |
| Manner of presentation | | 7 |
| Exhibit not of general interest | | 4 |
| Text and information in English | | 1 |
| Film presentation | | 1 |
| Other criticisms | | 5 |
| | 106%@ | |

@ Some respondents gave more than one answer.

COMMENTS IN DETAIL ...

"And what did you not particularly like about this exhibition?"

Marshall House
(400)

NO CRITICISM (55%)

I liked everything: 47%

"I liked everything about this exhibition."
"It was perfect. I wouldn't know what there would be to criticize."
"I found everything highly interesting."
"There was not a thing I didn't like. Everything was very impressive."
"I thought everything was interesting since it was all new to me."

No opinion/No answer 8

CRITICISM (51%)

Too many people: 25

"The organization of the exhibition could be better. They admit too many people at a time."
"There are too many people forming big crowds. It is troublesome to get near the things you want to see."
"You have to wait too long before you get admitted. They admit about 150 persons at a time but only about 30 are able to see anything and listen to the instructions."
"There were too many visitors. There should be a separate guided tour for pupils."
"The organization was poor. A better admittance procedure and a better organization of the flow of visitors within the exhibition would be advisable."

Lack of information on the exhibition objects: 8

"I think more information should be given at the various stalls of the exhibition. To many visitors the things shown there are absolutely unfamiliar."
"The internal structure of the rocket should have been explained by an expert in order to give a better understanding."
"The experiment with the electronic computer was not understood by most of the visitors."

The manner of presentation: 7

"The objects exhibited in the electronic lab should have been placed higher up."
"The instructions or explanations should be given louder, if possible over a microphone."
"The exhibition halls and stalls (as for instance the electronic lab) are too small. It is not possible for all the visitors to see and hear the explanations at the same time."

(Cont'd on next page)

(Cont'd from preceding page)

Marshall House

The exhibit was not of general interest: 4%

"Some things are too complicated for the layman (e.g. electronic lab)."
"I'm thinking of the planets which are mainly of interest to the meteorologists. I myself am more interested in practical things."
"I liked everything but I still think they should also have given some consideration to subjects in which women are interested."

Text and information in English: 1

"The movie presentation in English was not according to my taste. The accompanying film texts and the captions of the exhibits should not all have been in English."
"I didn't think it so wise to have all the captions in English. They should not have failed to have a German translation for those visitors who did not know English."

The film presentation: 1

"The film did not approach the quality of the other sections of the exhibition."
"I did not like the picture so much. The theme was nothing new. I've already seen similar films. That was nothing extraordinary in comparison to all the rest."

Other criticisms: 5

"I didn't like it so much that a technical development is shown here that one of these days will be beyond human control."
"I missed a few sidelights on future projects, like for instance, the flight to the moon."
"One should have paid more attention to the significant contribution of the German scientists."

106%@

@ Some respondents gave more than one answer.

U.S. EXHIBIT PLACED SECOND TO BRITISH AS BEST LIKED COUNTRY EXHIBIT. CANADIAN EXHIBIT LIKED THE LEAST ...

When those persons who had visited more than one country pavilion were asked which one they liked the best, the British pavilion ranked first (18% of all Fair visitors), while the U.S. exhibit was second (with 14% of all Fair visitors).

Such a ranking, however, does a certain injustice to the U.S. exhibit. In this connection it must be remembered that more than twice as many people saw the British pavilion as saw the U.S. exhibit. Examining the ratio of U.S. pavilion visitors who nominated it as the best, as against the ratio of British pavilion visitors who called _it_ the best, one notes that half of all those who saw the U.S. exhibit nominated it as the best. On the other hand, less than one third of those who saw the British exhibit called it the best. In this type of analysis the Swiss exhibit should not be overlooked. It was seen by only 17% of all Fair visitors, but was liked enough so that 7% of all Fair visitors called it the best one there among the

country exhibits. This means that four out of ten viewing the Swiss pavilion liked it well enough to nominate it for first place. Under such a system of ranking it would come in second to the U.S., and ahead of the British.

> "At this year's Industrial Fair a number of foreign nations again have their own pavilions or special exhibitions. Which of the pavilions and special exhibitions listed on this card did you visit? (CARD)
>
> Which of these exhibitions or pavilions left the best impression on you? And which did you like least?"

Visitors to West Berlin
Industrial Fair 1956
(Fair Exit)
(1001)

| | Visited | Liked best | Liked least | Ratio - liked best/ visited |
|---|---|---|---|---|
| America (Marshall House) | 28% | 14% | 1% | 50% |
| France | 52 | 6 | 6 | 12 |
| England | 58 | 18 | 3 | 31 |
| Canada | 37 | 1 | 8 | 3 |
| Italy | 54 | 6 | 4 | 11 |
| Belgium | 38 | 1 | 2 | 3 |
| Netherlands | 48 | 3 | 3 | 6 |
| Austria | 45 | 2 | 5 | 4 |
| Spain | 10 | 1 | 4 | 10 |
| Switzerland | 17 | 7 | * | 41 |
| Pavilion of the Nations | 33 | 1 | 2 | 3 |
| All | 1 | - | - | - |
| None | 24 | - | - | - |
| No opinion | - | 10 | 32 | - |
| | 445%@ | 70% | 70% | |

### REASONS FOR LIKING COUNTRY EXHIBITS BEST OR LEAST ...

Since the answers to the questions "What did you like most in the ...... country pavilion?" (If mentioned as the one liked best) and "Why did you like the .......pavilion least?" in effect simply told what was displayed at the pavilion, with certain percentages saying they liked it and other percentages saying that they disliked these same things, all such replies have been placed in the Appendix to this report.

## Section III - Reaction to Details of the Exhibit

EIGHT OUT OF TEN SHOW CLEAR COMPREHENSION OF LECTURE, CALL IT EASY TO UNDERSTAND ...

The recorded lecture, which was given to all visitors in groups of 250 (as the initial film presentation was), contained the kernel of the exhibition. While the initial film showing may be thought of as a pre-conditioner to what would be shown in the exhibition, the lecture was designed to explain the central theme or meaning behind the exhibition. That it was the outstanding aspect of the exhibition will become clear through the following sets of figures.

As a preliminary to asking the Marshall House visitors what the lecture told them, they were first asked if they remembered the lecture. Obviously, if anyone could not remember it, he was in no position to tell us what it was about. The replies to this question showed that 98% "remembered" the lecture. The missing 2%, by replying that they did not remember the lecture, are considered to mean that they do not remember what the leacture was about.

When, therefore the 98% who said that they remembered the lecture were asked to explain in their own words what the lecture was about it is possible to classify their answers according to whether they show a clear comprehension of the them, or not. The results of this further analysis is shown in the following Summary Table.

"Still on the ground-floor you entered a lecture-room with an illuminated globe - everybody had to stand - do you remember this lecture?"

IF "Yes, remember":
"What did this lecture tell you?"

Summary Table

| | Marshall House |
|---|---|
| Clear comprehension | 81% |
| Some comprehension | 3 |
| No comprehension | 14 |
| | 98% |
| Not asked | 2 |
| | 100% |

Lecture Hall Audience

Lecture Hall Display

The actual replies made by the various individuals which were considered as examples of "clear comprehension", "some comprehension" or of "no comprehension" are to be found in the following verbatim replies.

> "Still on the ground-floor you entered a lecture-room with an illuminated globe - everybody had to stand - do you remember this lecture?"
>
> IF "Yes, remember":
> "What did this lecture tell you?"

Marshall House

CLEAR COMPREHENSION

It gave a survey of the technical and scientific progress man has made in space flight: 29%

"People were to glean from this lecture how far man has gotten in making practical use of research and science findings in order to penetrate the upper atmosphere."
"This lecture conveyed the overwhelming message that man now has the instruments for penetrating into space."
"From time immemorial it has been the dream of mankind to penetrate into the universe and now it seems as if this will soon come true."
"We were shown how far man has advanced in space research and what problems remain to be solved."
"The idea was to record the progress made in space research from the first beginnings to the building of an artificial satellite."

The equipment and operation of a satellite were described: 24

"For the first time I got an accurate idea of how an earth satellite is equipped and how it functions."
"During this lecture the construction of a rocket which had been kept secret in the past was candidly described. It was shown how a satellite circles the earth, and how measurings made during flight are transmitted by antennas to stations on the ground."
"It is planned to send off into space a satellite which scientists have equipped with measuring instruments. This satellite will then pass in an elliptical orbit around the earth and all reports from the instruments during flight will be picked up down on the earth."
"The construction of the earth satellite was described and the problems which had to be solved during the process were explained."
"It was explained how the earth satellite functions. I had believed that only measurements are collected during the flight, but I heard that the findings are transmitted by telemetering the earth."

(Cont'd on next page)

(Cont'd from preceding page)

| | Marshall House |
|---|---|
| New possibilities for exploring space with man-made satellites were disclosed: | 22% |

"The development and operation of man-made satellites was explained. Rockets will be used for propelling a satellite into space which then will circle the earth and the built-in instruments will record what goes on in the outer atmosphere with the findings appearing on a radar screen on the ground."
"It emerged that it will be possible to propel satellites into the upper atmosphere and that science may greatly profit from this new development."
"It was shown how one can draw conclusions on what goes on in the upper atmosphere from recordings made by satellites shot into space."
"People gleaned from this lecture that scientists have succeeded in constructing an earth-circling satellite packed with a battery of instruments which will help man to chart a much larger section of the universe than he has done so far."
"It was explained how space can be explored with artificial satellites."

| | |
|---|---|
| A survey on the development of rockets was given: | 13 |

"Rocket research was described most graphically from its early beginnings to the present stage of development in space research, and also very lucid illustrations were given."
"We were informed on the results achieved in the field of rocket research, especially on the altitudes rockets have reached so far."
"The topic of the lecture was the development of and practical tests conducted with rockets."

| | |
|---|---|
| The technical process of launching a satellite was explained: | 11 |

"The idea was to explain to the general public the technique of propelling a man-made satellite into space."
"Well, it seemed to me the purpose of the lecture was to explain the technical angle of this business. You learn how the scientists envisage the propelling of satellites into space."
"Visitors heard that the individual phases of the ascent as well as the take-off of a satellite can now be transmitted to the ground."
"The reduced weight involved is new to me. I learned that only by becoming lighter has it become possible for a satellite to reach great heights."

(Cont'd on next page)

(Cont'd from preceding page)

Marshall House

The plan of launching a satellite in the near future was revealed: 4%

"The audience was told that in the next year, that is, 1957, a satellite will be shot into space."
"It was said that in the year 1957 a man-made satellite will circle the earth for the first time sending its findings down to us."
"We heard that the plan of shooting satellites into space is about to be carried out."

SOME COMPREHENSION

Miscellaneous comments: 11

"We heard how scientists envisage future developments in space research."
"It emerged that mankind may some day profit from space research."
"American scientists try to overcome the technological problems which space research poses."
"It was an introduction into the basic principles of space flight."

NO COMPREHENSION

Conditions in the upper atmosphere were described: 3

"The audience learned a lot about geophysics. One got to understand some things about the different sizes and distances of bodies in the universe."
"It was a good idea to illustrate the orbits of moon and earth."
"I received a clear idea of the constellation of earth, moon and satellites, and the distances between them."

A rough estimate of the costs of space flight was given: 1

"Some of the economic angles were new to me. I had not known, for instance, that it's cheaper to send a satellite circling around the earth than a rocket."
"I learned what it costs to shoot rockets into space. It is very expensive."

Adverse criticisms offered: 1

"The whole thing was just something with which to while away time. No need to say more."
"The proportions of the mock-ups could easily mislead uninitated visitors, but I had known that before. The lecture had more of a symbolic meaning."

No opinion/No answer: 6

125%©

© Some respondents gave more than one answer.

Since one of the key aspects of the lecture, was the ease or difficulty of understanding of the lecture for the average visitor, it is gratifying to note that less than one person out of ten (7%) called it difficult. Even if one is conservative on the question and only those persons who actually replied that the leacture was easy to understand are used to judge the understandibility of the lecture, a high positive percentage is found - namely 83%.

"Still on the ground-floor you entered a lecture-room with an illuminated globe - everybody had to stand - do you remember this lecture?"

IF "Yes, remember":
"In your opinion, was this lecture easy or difficult to understand for most of the people?"

| | Marshall House |
|---|---|
| Easy to understand | 83% |
| Difficult to understand | 7 |
| No opinion | 8 |
| | 98% |
| Not asked | 2 |
| | 100% |

MOST PEOPLE REMEMBER ELECTRONICS LAB, BUT ONLY ONE THIRD RECEIVED CLEAR COMPREHENSION OF WHAT WAS SHOWN ...

A second important section of the exhibition was the area devoted to examples of the various new electronic discoveries which make launching of a satellite possible. A number of these were set up and explained by lecturers in various booth.

While "remembrance" of these sections of the exhibit may be viewed as clues to the interest in and impression made by that part of the exhibit, actual comprehension of the message is the real pay-off. The electronics laboratory section is a good illustration of apparent interest which somehow did not return dividends in the form of understanding. On the question of whether they remembered the section, almost seven out of eight people (85%) said that they did.

> "Up on the first floor, just after coming up the steps, there was a laboratory section with many electronic devices. Do you remember this part of the exhibition?"

| | Marshall House |
|---|---|
| Yes, remember | 85% |
| No, don't remember | 15 |
| | 100% |

Electronics Lab - Solar Battery

Electronics Lab - Pilot's Panel

When, however, the answers of those people who said they remembered the section were also classified for comprehension of the basic message of the laboratory section, it was found that only one third of the visitors (32%) could be said to have shown by their replies that they had a clear comprehension of the purpose behind the electronics lab.

> "Up on the first floor, just after coming up the steps, there was a laboratory section with many electronic devices. Do you remember this part of the exhibition?"
>
> IF "Yes, remember":
> "What idea was expressed in this section?"

Summary Table

| | Marshall House |
|---|---|
| Clear comprehension | 32% |
| Some comprehension | 17 |
| No comprehension | 36 |
| | 85% |
| Not asked | 15 |
| | 100% |

The actual answers given to the question as to what idea was expressed in the electronics section can be read on the following pages.

"What idea was expressed in this section?"

| | Marshall House |
|---|---|
| CLEAR COMPREHENSION | |
| How small and precise the new technical devices are: | 18% |

"One could see the tiny instruments and apparati destined for the satellite."
"It is possible nowadays to construct transmitters which are so small and light that they can be fitted into rockets."
"I think they wanted to show that technical developments have made it possible to install the most complicated devices in a minimum of space."
"I presume that those are devices which will enable us to transmit the recordings of the satellite. Those devices, although very small, are highly sensitive and react minutely."
"Above all, they want to demonstrate how after long years of experimenting the smallest measuring instruments have been developed."

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Marshall House

Only the smallness and lightness of electronic devices make the construction of an artificial satellite possible: 15%

"This section shows that only with the aid of these exceedingly small and light instruments can one undertake an exploration of outer space."

"Only after these tiny devices had been developed did it become possible to equip artificial satellites with the necessary instruments to send to earth the recorded atmospheric conditions of outer space."

"It is the smallness of the instruments which renders it possible to reach such extreme altitudes."

"It is shown that none of the ordinary instruments can be used since the whole equipment has to be filled into a minimum of space."

"You come to realize how many difficulties the scientists have to overcome before they will be able to explore space. They have to develop the smallest and lightest possible instruments in order to make sure that a satellite will reach space at all."

SOME COMPREHENSION

How solar energy can be utilized for technical purposes: 8

"The idea was to show that electrical energy can be produced from solar radiation which is then used to transmit information from the satellites to the earth."

"Attempts are made to convert solar energy into electrical energy and to put it to use in space research."

"It was very interesting to me to see how solar energy is put to use and I consider this the idea which was expressed in this section."

How important it is, in the interest of reducing costs, to develop small devices: 5

"New developments in the field of electronics are most important for space research as they have made it possible to build small instruments. Operational costs would be considerably higher if large and heavy instruments would be packed into space ships."

"As shooting a satellite into space is a very expensive affair, it is improtant to develop the smallest possible instruments as then more can be fitted into a satellite and still overall costs would be lower."

"I think the idea is to illustrate recent technical improvements. More preceisely, how far scientists have gotten in reducing the volume and weight of measuring instruments, thus reducing the size of rockets. By this expedient research projects can be carried out with moderate funds."

How electronic devices work: 5

"The idea was to make the average person understand the scientists' work, as, for instance, the functioning of an electronic brain."

"The idea was to demonstrate the functioning of electronic devices."

"The idea was to show the functioning of electronic devices. However, there should be a more systematic way of explaining things."

(Cont'd on next page)

(Cont'd from preceding page)

Marshall House

How the man-made satellite is equipped and how it functions: 4%

"The idea was to give an impression of how the technical devices for space research look."
"The idea was to show the means and the instruments as well as the equipment necessary for furtherance of space research."
"The idea was to show which devices have to be installed and how they think a satellite will operate."

NO COMPREHENSION

Quick and correct functioning of the electronic devices is substituted for the human brain: 9

"I think the idea was expressed that an electronic brain works much faster than a human one."
"This section shows that the electronic devices are more efficient than man and save time and human labor."
"Man hardly needs do anything anymore."
"The idea was to show the progress of automation. It is a substitute for human effort."

The exhibition supplied information on space research: 3

"It was to illustrate the development of space research."
"They showed how man is planning to explore space. I could not tell you precisely what idea was expressed."
"This section wants to arouse people's interest in this kind of work, namely, for space research."

The human brain cannot be substituted: 2

"The idea was expressed in this section that a machine cannot be substituted for the functions of a human brain."
"It became clear that although the electronic brain works faster than a human brain, it can never replace the creative thinking power of man."

Other answers: 5

"All I can remember is that they tried to record the human voice somehow. There was something about heat, too, but I do not know exactly what it was."
"They wanted to show that great projects can be made possible by using minute sources of energy. I think of the methods of propulsion for instance."
"The idea was to show electronic devices as a help to mankind."

No underlying idea was discernible: 1

"It didn't occur to me that some particular idea was expressed."
"As far as I could see, there was no underlying idea in this part of the exhibition."

No opinion/No answer: 22

97%@

@ Some respondents gave more than one answer.

EIGHT-TENTHS REMEMBER MEDICAL SECTION, WITH SIX-TENTHS SHOWING CLEAR COMPREHENSION OF THE PURPOSE ...

The third important section of the exhibition had to do with the various medical problems attendant upon man's attempts to explore outer space - the stresses and strains to which the human body would be subjected - and medical science's means of meeting these problems.

Not quite as many people said that they remembered this part of the exhibition. While it is possible that a number of visitors may have literally passed up this section for one reason or another, it is still safe to assume that the fact that barely eight out of ten (79%) remembered the section indicates its lesser appeal (as against the two sections previously discussed).

"Do you remember that section of the exhibition which dealt with medical questions in the field of space flight?"

| | Marshall House |
|---|---|
| Yes, remember | 79% |
| No, don't remember | 21 |
| | 100% |

Medical Research Section

Medical Research Section

While there may have been less interest in this section than in the electronics lab section, there can be little doubt but that many more people came away from the medical section with a clear idea of the main purpose behind it, than did so from the electronics lab, Classification of the responses of those who could remember the medical section shows that six out of ten visitors to the Marshall House (62%) had a clear comprehension of the underlying message of this particular part of the show.

> "Do you remember that section of the exhibition which dealt with medical questions in the field of space flight?"
>
> IF "Yes, remember":
> "What do you think was the main idea of this section?"

Summary Table

| | Marshall House |
|---|---|
| Clear comprehension | 62% |
| Some comprehension | 10 |
| No comprehension | 7 |
| | 79% |
| Not asked | 21 |
| | 100% |

COMMENTS IN DETAIL ...

> "What do you think was the main idea of this section?"

Marshall House

CLEAR COMPREHENSION

Man's physical power of resistance during space flight is tested: 27%

"They want to find out by testing to what extent man can stand the strains of space flight."

"By exposing test persons to different air pressures as encountered in different altitudes, scientists are able to study the effects of space flight on human organs, above all, the heart."

"In this section man's physical endurance is illustrated. The tests described here help to clarify the problem of whether a human organism can exist in such immense altitudes."

"It is important to establish whether a human being will survive a flight into space."

"I'll tell you what it all was about. They want to find out how man reacts to sudden acceleration of speed, temperature, fluctuations, and other such influences."

(Cont'd on next page)

(Cont'd from preceding page)

Marshall House

Safety of the crews must be insured: 26%

"The problem of how to protect space-flying man against high speeds and heat radiation was analyzed."
"It is necessary to find out whether human beings will be able to live through such experiments in the upper atmosphere and what measures have to be taken to protect them against harm."
"The issue set forth here is the safety of space-flying crews. One has to decide when conditions will safely allow human beings to go into space."
"All kinds of precautions must be employed to help man adapt himself to conditions in the upper atmosphere. The project of space-flying would be sheer foolishness if man would perish."
"To send a manned satellite into space will be possible only after all details are known about how the human organism reacts to the strains of space flight. And by developing the devices shown in this section, one can gradually eliminate the hazards man is exposed to."

The physiological functions of a test pilot are continually observed during high-altitude flights: 19

"It was shown that test persons are under efficient medical care. Crews aren't wantonly sent on high-altitude flying missions. Their physical functions are carefully watched over by physicians."
"The idea was to show how far scientists have gotten in recording the reactions of the human organism during test flights and transmitting the results to ground stations where physicians evaluate them and thus watch over the test crews."
"The physical condition of a person flying in a plane can be checked at any time during the flight."
"It was emphasized that pilots aren't exposed to crazy risks, but that they can always be sure that their physical and emotional reactions are constantly checked on the ground."

SOME COMPREHENSION

Ways and means are sought to open up outer space to man: 10

"They want to make people understand how difficult it is to penetrate into outer space. They search for ways and means which will help man to achieve this aim."
"The purpose of this section of the exhibition was to demonstrate that under certain conditions man can tear down the barriers of space. But before this aim will be reached, much research work has to be done and many experiments have to be carried out."
"There is a possibility that some day human beings will be able to exist in outer space similarly as they live on the earth today. They just need different equipment, I'm thinking of pressurized suits, and such things."

Other answers: 1

"Medical progress was described."

NO COMPREHENSION

No opinion/No answer: 7

90%@

@ Some respondents gave more than one answer.

LECTURE ROOM AND FILM PRESENTATION RATED MOST INTERESTING ...
HISTORICAL SECTION AND STRATOBALLON RATED LEAST INTERESTING ...

The seven main sections comprising the exhibit "Space Unlimited" were listed on a card (in the order in which they were set up in the exhibit) to help respondents answer the question of how interesting they found the individual sections of the exhibit. The two sections to which the largest percentages replied "very interesting" were 1- the Lecture Room (87%), and 2- the initial Film Presentation (80%). Somewhat further back in popularity were the rocket models, with 71%

The Historical Section and the Stratoballon were easily considered the least interesting of all the sections. Even though three possible answers were provided for ("very interesting", "slightly interesting", and "not at all interesting"), identical percentages called these two parte "not interesting at all" (11%) or only "slightly interesting" (34%).

> "Some of the main sections of the exhibition are listed on this card. (CARD)
>
> Would you please tell me how interesting you thought the individual sections of the exhibition. Were they very interesting, only slightly interesting, or not interesting at all? How about .....?"

| | Marshall House | | | |
|---|---|---|---|---|
| | Very interesting | Slightly interesting | Not interesting at all | No opinion |
| Film | 80% | 19% | 1% | 1%..100 |
| Historical Section | 38 | 34 | 11 | 17 |
| Lecture Room | 87 | 10 | 1 | 2 |
| Electronics Lab on the first floor | 47 | 20 | 5 | 28 |
| Medical Research | 55 | 18 | 3 | 24 |
| Stratoballon | 43 | 34 | 11 | 12 |
| Rocket Models | 71 | 22 | 4 | 3 |

Historical Section

## LECTURE ROOM AND FILM ALSO CONSIDERED EASIEST TO UNDERSTAND ...
## ELECTRONICS LAB MOST DIFFICULT TO UNDERSTAND ...

After the Marshall House visitors had indicated their ratings of the various sections as regards interest, they were asked how understandable they found these same sections. This was a particularly important question inasmuch as it was realized that despite high interest in the exhibit, or any of its sections, the showing could still be a failure if it did not impart a satisfactory level of understanding.

Respondents evaluations of the ease of understanding the sections, as well as an analysis of the degree of comprehension of the messages of these same sections, is important for an accurate judgment on how effective the various sections were in getting their message over.

From the results shown in the following table, it is apparent that the Lecture and Film presentation were considered the easiest to understand - for, with 71% and 69%, the percentage of people calling those sections "very easy to understand" far exceeds any other.

The Electronics Lab was clearly considered the most difficult to understand inasmuch as it received the lowest percentage calling it "very easy to understand" (30%) and the largest percentage calling it "hardly understandable" (13%).

> "Some of the main sections of the exhibition are listed on this card. (CARD)
>
> How understandable did you find what was shown in the different sections - very easy to understand, easy to understand or hardly understandable? How about .....?"

|  | Marshall House |  |  |  |
|---|---|---|---|---|
|  | Very easy | Easy | Hardly understandable | No opinion |
| Film | 69% | 31% | -% | *%...100% |
| Historical Section | 45 | 34 | 2 | 19 |
| Lecture Room | 71 | 25 | 2 | 2 |
| Electronics Lab on the first floor | 30 | 28 | 13 | 29 |
| Medical Research | 41 | 28 | 5 | 26 |
| Stratoballon | 42 | 36 | 8 | 14 |
| Rocket Models | 49 | 37 | 8 | 6 |

* Less than one half of one per cent.

Skyhook Balloon

Weather Balloon

BEST LIKED - LECTURE ROOM
MOST DIFFICULT TO UNDERSTAND - ELECTRONICS LAB
HAD MOST NEW THINGS - LECTURE ROOM AND ELECTRONICS LAB
WISH TO REVISIT - LECTURE ROOM AND ELECTRONICS LAB

To obtain final judgments on the individual sections of the exhibit (as well as a check on the results of the previous questions), all interviewees were presented with the list of sections again and asked to select the one section which they

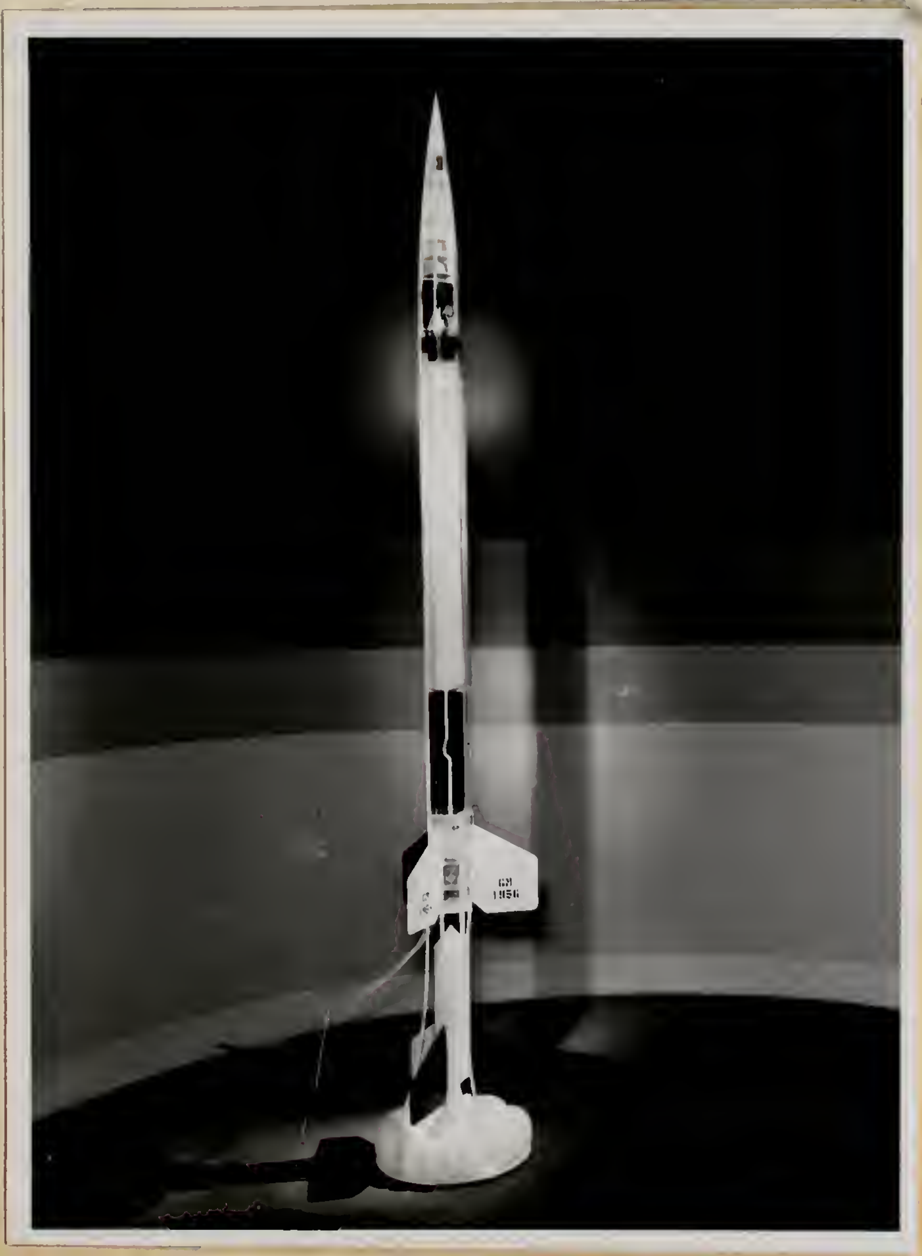
a) liked the best
b) thought particularly difficult to understand
c) felt offered the most new things
d) would like most to revisit.

As indicated in the heading to this section of the report, the Lecture Room and the Electronics Lab were in the forefront of most people's mind. Previous indications that the Lecture Room was the most liked, considered most interesting, etc., and that the Electronics Lab was found most difficult to understand is here confirmed.

As best liked, the Lecture Room (with 44%) is far ahead of the film presentation, which was in second place (20%). As most difficult to understand, the Electronics Lab (33%) had no competition.

Bell X-1A

Rocket Model Display



Despite the greater appeal of the Lecture Room over the Electronics Lab it is interesting to note that these two sections run one-two in popular judgment as to the section that offered the most new things, as well as the section which people would like to come back and see again. Such ratings hint that with suitable changes the electronics laboratory could possibly show considerable improvement in interest.

"Here again is a list of the sections of the exhibition. (CARD)

A - Which section did you like best?

B - Which section did you think particularly difficult to understand?

C - Which section offered the most new things as far as you are concerned?

D - Which section would you like best to revisit?

| | Marshall House | | | |
|---|---|---|---|---|
| | A | B | C | D |
| Film | 20% | *% | 11% | 14% |
| Historical Section | 4 | 2 | 2 | 4 |
| Lecture Room | 44 | 2 | 24 | 28 |
| Electronics Lab | 9 | 33 | 23 | 20 |
| Medical Research | 6 | 7 | 10 | 10 |
| Stratoballon | 1 | 3 | 3 | 3 |
| Rocket Models | 11 | 6 | 15 | 11 |
| All | 2 | 34 | 7 | 4 |
| None | - | - | * | 1 |
| No opinion | 3 | 13 | 5 | 5 |
| | 100% | 100% | 100% | 100% |

THREE-FOURTHS OBTAINED CLEAR COMPREHENSION OF MAIN PURPOSE OF EXHIBIT....

When asked to state in their own words the main purpose of the U.S exhibit at the Marshall House, only one person out of twenty (5%) from among those who had seen the exhibit failed to show any comprehension of the basic theme, while three out of four (76%) revealed a clear out understanding of the basic theme.

"What, do you believe, was the main purpose of the exhibition here in the Marshall House?"

SUMMARY TABLE

| | Marshall House |
|---|---|
| Clear comprehension | 76% |
| Some comprehension | 19 |
| No comprehension | 5 |
| | 100% |

COMMENTS IN DETAIL

| | Marshall House |
|---|---|
| CLEAR COMPREHENSION | |
| It illustrates the present stage of development and the future possibilities of space and rocket research: | 69% |

"As I see it, the idea behind the exhibition is to make the average person understand what space research means and what new fields it opens up. For this purpose the launching of a satellite was explained in detail."

"This exhibition was arranged to enlighten people on the subject of space research. What has been achieved so far was to be demonstrated."

"As things stand at present, most people only have a vague idea about rocket and space research. And so the purpose of the exhibition was to supply accurate information on this whole complex of problems.

"The idea was to inform people on how far man has gotten in exploring space and to make them understand that some day it may be possible to travel to the moon and other planets."

"The present stage of development of space research was to be demonstrated and in that way an attempt was made to arouse the enthusiasm of as broad a sector of the population as possible for this modern discipline."

"For a long time past it has been the aim of man to penetrate more and more deeply into space. This exhibition made it clear to us what means are presently at our disposal."

"The idea was to report on the progress made in space research and to demonstrate the technical development of rockets and other equipment needed in this field."

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Marshall House

It demonstrated the practical application of space and rocket research for peaceful purposes: 9%

"The idea was to explain to the general public that space research is carried on with peaceful aims in view. Just think that some day it may be possible to use rockets as an inter-continental mail carrier."

"This exhibition was put on to demonstrate that space research can be used for peaceful service."

"This exhibition serves the purpose of making it clear to people that man today is in a position to turn a destructive thing - like the V-2 rocket - into something positive which will help to promote pure science."

"Today's scientists are out to help mankind and not to harm them with the findings of space research."

SOME COMPREHENSION

It illustrated the development of technology and research generally: 20

"It gave a survey on the progress made up to the present time in the field of technology and research."

"Technological developments were recorded. It was shown how far we have gotten in the field of technology."

"The purpose of this exhibition was to illustrate the present stage of science."

"The whole story of space research was told in a most objective manner. It was shown that scientists of all nationalities have made valuable contributions. They didn't forget to mention German scientists, starting with Lilienthal. The Americans didn't overlook the fact that the pioneers of old share in today's achievements in space research."

"They intended to document the achievements of space scientists."

It demonstrated the leading position American science and industry occupy in the field of space research: 16

"The idea was to make people understand that the Americans are leading in the field of space flight and rocket techniques."

"Well, I guess they meant to show that American industry is ahead of others in solving problems of space research."

"I feel, the idea was to demonstrate the technical superiority of the U.S. in space research."

"The Americans wanted to demonstrate that they do not only allot more ample funds to space research, but are actually far ahead of the other countries in this branch of technology."

"This exhibition was arranged in order to give people an insight into how far America has advanced in exploring the upper atmosphere."

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Marshall House

NO COMPREHENSION

Other answers: 7%

"Visitors were to be informed on the dangers of atomic weapons. The consequences atomic trials may have for man were illustrated."

"The Germans were to be shown things which they cannot achieve by themselves as they do not have the necessary financial means at their disposal."

"The idea was to show what use is made of Marshall Plan funds."

"The purpose of this exhibition was to arouse the interest of the general public for research. As it is, people very rarely read any scientific publications. Perhaps now one or the other will do so and will think of the problems involved."

No opinion - no answer: 1

122%@

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@ Some respondents gave more than one answer

## ALMOST SIX-TENTHS CLAIM TO HAVE LEARNED MUCH MORE ABOUT SPACE RESEARCH....

After leaving the Marshall House almost six out of ten (58%) claimed to have learned at least "much more" about space research than they knew before. If to this percentage is added the third (34%) who replied that they had learned "somewhat more", the effectiveness of the exhibit in imparting new knowledge would seem to be beyond question.

> "Would you please tell me how much, approximately, you now know about what is going on in the field of space research. Do you now know very much more, much more, somewhat more, only a little more about it , or no more than before?"

| | Marshall House |
|---|---|
| Very much more | 28% |
| Much more | 30 |
| Somewhat more | 34 |
| Only a little more | 6 |
| No more than before | 2 |
| No opinion | * |
| | 100% |

## IMPARTIALITY OF EXHIBIT BACKED BY NINE OUT OF TEN....

The way that the exhibit handled the contribution of foreign scientists, notably German scientists, to the field of space research was proven wise inasmuch as nine out of ten German visitors to the exhibit answered that they felt that the contributions of American scientists were <u>not</u> overemphasized. Coming from a German audience which is extremely sensitive to and aware of the contributions of German scientists to space research and rocket developments, the figures are a tribute to the objective presentation of the subject.

> "Do you think that this exhibition overemphasized the merits of American space scientists, or were their merits presented as they really are?"

| | Marshall House |
|---|---|
| Overemphasized | 2% |
| As they really are | 90 |
| No opinion | 8 |
| | 100% |

SPACE RESEARCH VIEWED AS PEACEFUL DEVICE BENEFITING MANKIND....

Visitors to the Marshall House were asked to chose one of five statements to describe their attitude toward space research. While three of the five were negative (statements B, C and D), one positive, and one somewhere in between, it is noteworthy that six out of ten (60%) selected the positive statement that space research is being applied for peaceful purposes and for the benefit of mankind, while the three negative ones were only chosen by a total of some 3%. The remainder (35%) selected the statement that space research should be an international undertaking in order to prevent disputes between nations.

"Which of the following statements comes closest to your attitude toward space research?" (CARD)

| | Fair entrance | Marshall House |
|---|---|---|
| A - In space research science and technology are applied for peaceful purposes, and for the benefit of mankind | 58% | 60% |
| B - Space research is a senseless human undertaking | 5 | * |
| C - Space research is mainly a military matter, and therefore can only develop into an evil for mankind | 4 | 2 |
| D - Space research is only a new attempt of the Americans to demonstrate their technical superiority | 3 | 1 |
| E - In order to prevent disputes between nations, space research should only be pursued on an international level | 27 | 35 |
| No opinion | 3 | 2 |
| | 100% | 100% |

Since this question was also asked of those persons entering the Fair Grounds, the replies of the two groups may be compared. The one variation in the replies obtained from the two groups is the finding that 12% of the group entering the Fair Grounds selected one of the negative replies, while only 3% did so at the Marshall House.

## EXHIBIT VISITORS TEND MORE TO BELIEVE THAT AMERICAN SPACE RESEARCH MAINLY PURSUES PEACEFUL PURPOSES THAN GENERAL FAIR VISITORS DO....

An interesting comparison is available between the opinions of those people who actually visited the Marshall House where the U.S. exhibit was and the general Fair Ground visitor as he entered the Grounds. Both were asked, "Do you have the impression that American space research mainly pursues warlike purposes or peaceful purposes?"

Among the general Fair visitors 13% thought that American space research was mainly devoted to warlike purposes, as against 63% who thought that America's purposes were peaceful. The climate of opinion evinced by the visitors to the U.S. space research exhibit was slightly more favorable - only 5% called U.S. purposes mainly warlike, as against 68% who called it peaceful.

"Do you have the impression that American space research mainly pursues warlike purposes or peaceful purposes?"

| | Fair Entrance | Marshall House |
|---|---|---|
| Mainly warlike purposes | 13% | 5% |
| Mainly peaceful purposes | 63 | 68 |
| Both purposes (volunteered) | 18 | 19 |
| No opinion | 6 | 8 |
| | 100% | 100% |

MAJORITY OF U.S. EXHIBIT VISITORS VS. MINORITY OF GENERAL FAIR VISITORS SAY U.S. VERY WILLING TO SHARE ITS SCIENTIFIC KNOWLEDGE....

Somewhat confirming the tendency noted above for visitors to the U.S. exhibit at the Marshall House to be slightly more favorable in their opinions concerning the U.S. than is found among people first entering the Fair Grounds, is the following question concerning America's willingness to share its scientific knowledge.

Only a minority of the people entering the Fair Grounds (45%) said that they thought the U.S. was "very willing" to share its scientific knowled with other nations. When people were interviewed upon leaving the U.S. exhibit, a clear majority (55%) felt that the U.S. was that willing.

> "In your opinion, to what extent is the United States of America willing to share the results of its scientific research with other nations: very willing, somewhat willing, not particularly willing, or really not willing at all?"

| | Fair entrance | Marshall House |
|---|---|---|
| Very willing | 45% | 55% |
| Somewhat willing | 49 | 37 |
| Not particularly willing | 2 | 2 |
| Really not willing at all | * | 1 |
| No opinion | 4 | 5 |
| | 100% | 100% |

* Less than one half of one percent.